



The ability gradient in tax responsiveness

Spencer Bastani, Daniel Waldenström 20 June 2022

How does people's ability influence their taxpaying behavior? This column links administrative tax and military enlistment registers in Sweden to measure how cognitive ability matters for income tax responsiveness. The authors find that individuals in the top decile of the ability distribution react twice as strong to a large and salient kink point in the tax code than the average individual, and three times as strong as individuals in the bottom ability decile. This ability gradient reflects both income shifting among high-ability businesses owners and labour supply responses among high-ability wage earners.

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One of the most fundamental areas of economic life is the interactions people have with the tax system. A vast empirical literature studies people's reactions to tax policy, with a heightened recent interest in how people understand, reason, and learn about the tax code (Saez et al. 2012, Bernheim and Taubinsky 2018, Stantcheva 2021). Several papers emphasise the role of acquired skills, such as education and information transmission among peers, but less is known about the role of innate traits and non-acquired skills.

In a new study (Bastani and Waldenström 2021), we analyse whether individuals with different cognitive abilities react differently to a large and salient discontinuity in the Swedish marginal tax rate schedule (an increase in the marginal tax rate of 20 percentage points). Our data come from administrative population registers on taxable incomes and cognitive abilities from the military enlistment at the age of 18.

High-ability people respond more to taxes

Figure 1 captures a fascinating stylised pattern. Ranking taxpayers according to their taxable income relative to the location of the kink, we observe statistically significant bunching in the income distribution (left panel) and a concurrent spike in average cognitive ability at the kink (right panel). In other words, smart people are more likely to bunch at the kink.

Figure 1 Bunching and average cognitive ability at the income tax kink point

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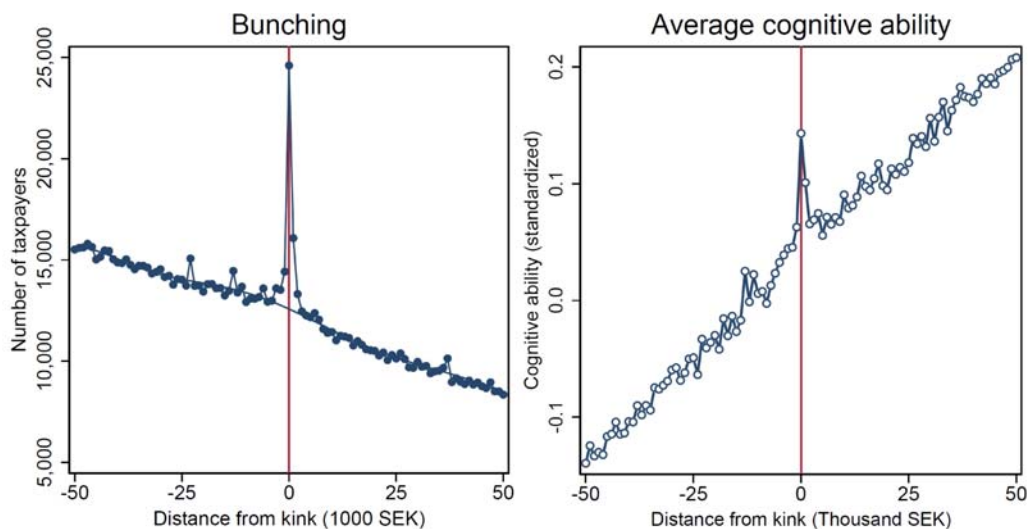
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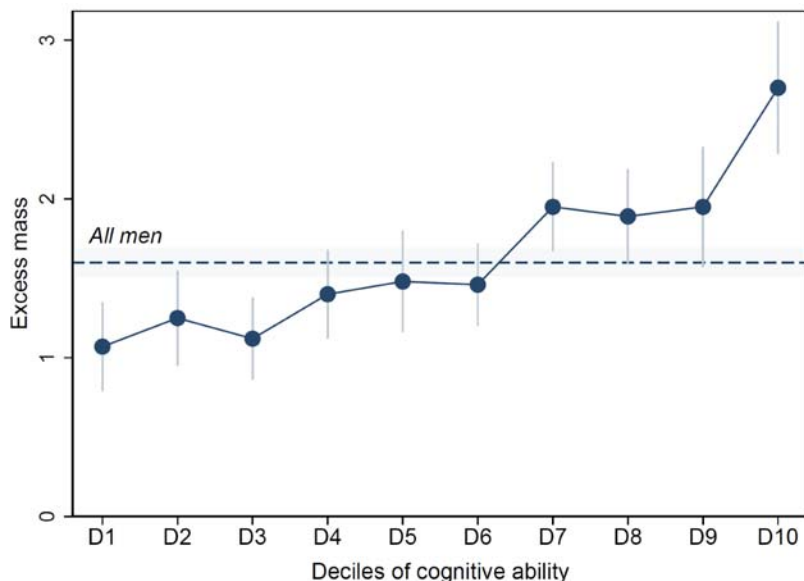


Note: Taxable income in 2012-2016 in bins of thousands of Swedish kronor (EUR/SEK=10).

To examine if there are systematic differences in tax responses across ability levels, we split the population into ten equally sized cognitive ability deciles (from the lowest decile 1, to the highest decile 10) and then estimate bunching within each ability decile.

Figure 2 reveals that people within higher cognitive ability deciles tend to be more responsive to income taxation. Ability decile 10 has an excess mass at the kink point that is twice as high as in the full population and almost three times as large as in the lowest ability decile. The increase is almost monotonic. We refer to this pattern as the ability gradient in tax responsiveness at the kink point and it is the main finding of our study.

Figure 2 The ability gradient in tax responsiveness



Note: Excess mass and 95% confidence intervals (+/- 1.96 times standard error, bootstrapped with 500 replications) at the kink point estimated separately for each decile in the male cognitive ability distribution (for all men in our main sample population) and for labour incomes earned during 2012-2016 (pooled data). The dashed line is the estimated (average) bunching in the full male population

Income shifting among high-ability self-employed

How can one explain this ability gradient in tax responsiveness? We begin by splitting income earners into wage earners and self-employed, distinguishing between incorporated and unincorporated businesses owners. Figure 3 reveals a slight tendency of an ability gradient among wage earners, which we show in the paper is partially driven by labour supply responses. More significantly, however, we find a clear gradient among incorporated business owners but no ability gradient among unincorporated self-employed (even though they bunch the most, as shown by high mass estimates).

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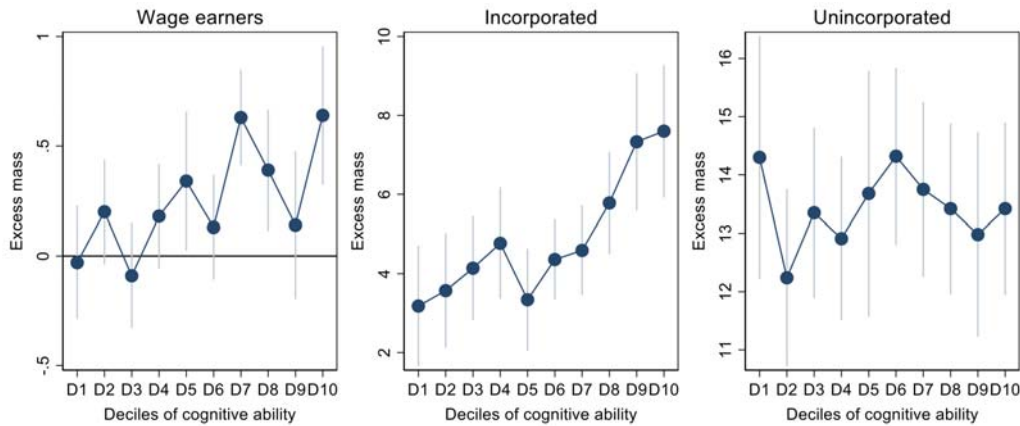
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What accounts for the sharp ability gradient among incorporated business owners? A key distinction between these groups is that owners of corporations can reclassify part of their highly taxed labour income as more leniently taxed capital income. Furthermore, the incentive to reclassify income increases discontinuously at the kink due to the sharp increase in the marginal income tax rate (capital income is taxed at a proportional rate). Our analysis shows that high-ability incorporated business owners who bunch at the kink are much more likely than high-ability unincorporated business owners to have large capital income, suggesting that income shifting is the main explanation for the ability gradient in tax responsiveness among the self-employed.

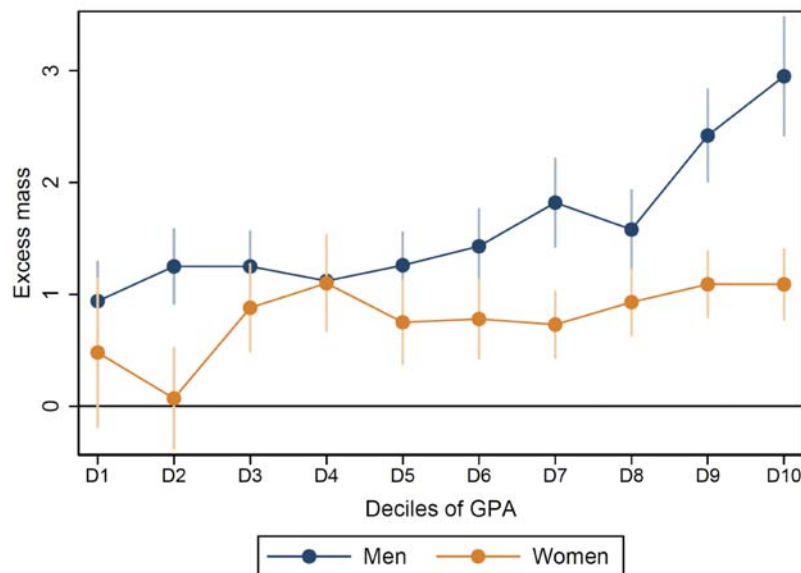
Figure 3 Ability gradients among wage earners and self-employed



Men exhibit stronger ability gradient than women

We also study whether there are gender differences in the ability gradient. Since we do not observe women in the military tests, we use high-school GPA as a proxy for cognitive ability. Figure 4 shows that there is no ability gradient for women, while the ability gradient for men is still visible when using this alternative measure of cognitive ability. A closer inspection reveals that this result is not driven by gender differences in self-employment.

Figure 4 Ability gradients among men and women



Conclusions and policy implications

Our study is one of the first to document that people with high cognitive ability react stronger to tax incentives than low-ability individuals, suggesting an ability gradient in tax responsiveness. Our empirical analysis links cognitive ability measured at age 18 with income records 20-50 years later, emphasising the importance of skills acquired before labour market entry for taxpayer behaviour and the relevance of these skills throughout the working life.

The results highlight a fundamental conflict in tax design. Governments wish to tax high-ability individuals more and high-elasticity individuals less. However, if high-ability individuals are also sticky individuals, the effectiveness of using progressive labour income taxation to achieve asset redistribution can be questioned.

An important lesson for policymakers is that taxes on labour and capital labour must be carefully calibrated to achieve the desired distributional objectives, especially in the context of dual income tax systems. Our paper highlights that the Achilles' heel of complex tax systems with ambitious distributional objectives is that they invite high-ability individuals to avoid the progressivity of the tax code through careful tax planning. More broadly, generous tax avoidance opportunities may hurt the long-run legitimacy of the tax system and affect tax compliance and social norms (e.g. Slemrod et al. 2019, Sarin and Summers 2020, De Neve et al. 2021).

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